EXECUTIVE SUMMARY

This Report presents economic values, often referred to as "critical values," for use in the conduct of benefit-cost and other evaluations of investments, including certain Airport Improvement Program (AIP) grants, and regulations subject to Federal Aviation Administration decisionmaking. Application of these values to their corresponding physical quantities permits valuation of the physical quantities in dollars. Conceptually, they can be thought of as measures of the dollar sacrifice associated with each physical quantity outcome—avoided fatality, air frame damage, etc.—resulting from a potential investment or regulatory action that society and users should be willing to make to undertake that investment or regulatory action.

Values presented fall into two general groups. Passenger related values consist of the value of passenger time, the value of an avoided fatality, and the value of avoided injuries. Aircraft related values include aircraft capacity and utilization factors, aircraft operating and ownership costs, and aircraft replacement and restoration costs. Passenger related values are established by Department of Transportation policy which is applicable to all Modal Administrations within the Department. Aircraft related values have been developed by the Office of Aviation Policy and Plans from public and proprietary data sources.

Summary values, which are applicable to benefit-cost analyses conducted in 1998, are presented in Table E-1. Passenger related values reflect current Department of Transportation guidance. Aircraft related values are derived from the detailed values presented in the text. Because text aircraft related values represent 1996, values presented in Table E-1 have been made current using the methodology of Appendix A. *These are summary values only. Analysts and other users should refer to the text of the report for further detailed values*. For aircraft related values, detail for most measures is available by specific aircraft, by generic aircraft classification, such as two engine narrow body, four engine wide body, or single engine piston, and by user profiles such as scheduled commercial service, air taxi, general aviation, or commuter. The various generic categories and user profiles have been constructed so as to anticipate the needs of analysts conducting investment and regulatory studies. Other measures can be developed from the underlying source data. Requests for assistance in developing information required for specific projects should be addressed to the Economic Program Officer, Office of Aviation Policy and Plans, APO-3.

The values presented in this report can be expected to change with the passage of time because of price and income level movements, aviation industry changes, advances in theoretical and empirical research, and policy changes. The Office of Aviation Policy and Plans will provide periodic updates to these values to reflect such changes. Pending such updates, aircraft specific values may be adjusted using the methodology contained in Appendix A.

Table E-1

Economic Values for Use in Analyses Conducted in 1998

Physical Unit	Value
Value of Passenger Time per Hour	
Air Carrier:	
Personal	$19.50
Business	$34.50
All Purposes	$26.70
General Aviation:	
Personal	$26.30
Business	$37.50
All Purposes	$31.10
Avoided Fatality	$2,700,000
Avoided Injuries	
Injury Value by AIS Category (per injury):	
Minor (AIS 1)	$5,400
Moderate (AIS-2)	$41,900
Serious (AIS-3)	$155,300
Severe (AIS-4)	$506,300
Critical (AIS-5)	$2,058,800
Fatal after 30 Days (AIS-6)	$2,700,000
Other Costs by AIS Category (per victim):	
Minor (AIS 1)	$2,300
Moderate (AIS-2)	$6,300
Serious (AIS-3)	$18,800
Severe (AIS-4)	$99,200
Critical (AIS-5)	$266,200
Fatal after 30 Days (AIS-6)	$119,000
Injury and Other Costs by ICAO Category (per victim):	
Minor	$38,500
Serious	$521,800

Physical Unit	Value
Aircraft Capacity and Utilization Factors	
Scheduled Commercial Service:	
Passenger Capacity	162.3 seats
Crew Size	6
Cargo Capacity	11.6 tons
Passenger Load Factor	70.7%
Cargo Load Factor	44.6%
Daily Utilization	6.9 hours
Average Flight Speed	417 mph
Air Carriers w/o Commuters:	
Passenger Capacity	168.7 seats
Crew Size	6.1
Cargo Capacity	12.2 tons
Passenger Load Factor	71.0%
Cargo Load Factor	44.6%
Daily Utilization	7.4 hours
Average Flight Speed	439 mph
Commuters Only:	
Passenger Capacity	30.6 seats
Crew Size	3
Cargo Capacity	1.6 tons
Passenger Load Factor	52.3%
Cargo Load Factor	33.1%
Daily Utilization	4.5 hours
Average Flight Speed	232 mph
Air Taxi:	
Passenger Capacity	6.6 seats
Passenger Load Factor	44.4%
Useful Load	3,097 lbs.
General Aviation Only:	
Passenger Capacity	5.4 seats
Passenger Load Factor	49.5%
Useful Load	1,894 lbs.
General Aviation and Air Taxi:	
Passenger Capacity	5.5 seats
Passenger Load Factor	49.0%
Useful Load	1,969 lbs.
Aircraft Operating Costs	

Physical Unit	Value
Scheduled Commercial Service:	
Variable Operating Cost per Hour	$2448
Fixed Cost per Hour	$645
Total Cost per Hour	$3093
Air Carrier w/o Commuter:	
Variable Operating Cost per Hour	$2876
Fixed Cost per Hour	$727
Total Cost per Hour	$3603
Commuters Only:	
Variable Operating Cost per Hour	$572
Fixed Cost per Hour	$276
Total Cost per Hour	$848
Air Taxi:	
Variable Operating Cost per Hour	$424
Fixed Cost per Hour	$356
Total Cost per Hour	$780
General Aviation Only:	
Variable Operating Cost per Hour	$190
Fixed Cost per Hour	$375
Total Cost per Hour	$565
General Aviation and Air Taxi:	
Variable Operating Cost per Hour	$303
Fixed Cost per Hour	$373
Total Cost per Hour	$677
Military: Variable Operating Cost per Hour	$1,631
Replacement Costs of Destroyed Aircraft	
Scheduled Commercial Service	$16,300,000
Air Carriers w/o Commuters	$19,480,000
Commuters Only	$3,740,000
Air Taxi	$665,000
General Aviation Only	$522,000
General Aviation and Air Taxi	$532,000
Military	$21,600,000
Restoration Costs of Damaged Aircraft	
Scheduled Commercial Service	$2,200,000

Physical Unit	Value
Air Carriers w/o Commuters	$2,630,000
Commuters Only	$501,000
Air Taxi	$143,000
General Aviation Only	$133,000
General Aviation and Air Taxi	$133,000
Military	$2,920,000